

A New Species of *Callicorixa* from Northwestern North America

(Heteroptera, Corixidae)

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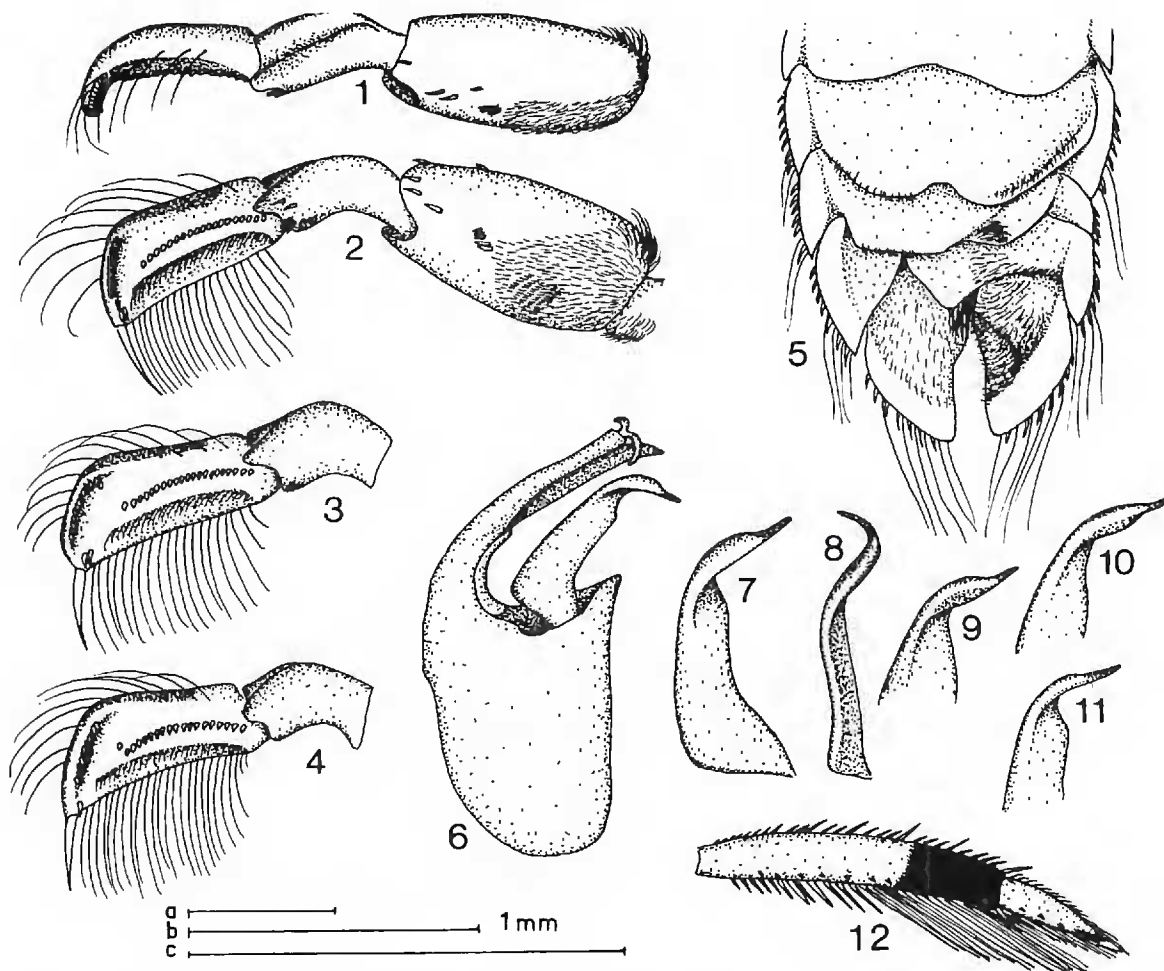
Callicorixa vulnerata (Uhler) was originally described from two female specimens collected from Washington Territory (*Corixa vulnerata* Uhler 1861). Hungerford (1948) amended the description by giving the characteristics of the male also. These characteristics included some variation, mainly in arrangement of palmar pegs: the males usually have two distinctly separate rows of palmar pegs, but occasionally 2-3 of the most distal pegs of the basal row appear to be out of line curving dorsally toward the apical row and almost linking the two rows together. Somewhat similar variation has also been described for North American *C. audeni* Hungerford (Hungerford 1948) and European *C. praeusta* (Fieber), *C. producta* (Reuter), and *C. wollastoni* (Douglas & Scott) (Jansson 1978). This variation, however, usually appears in one leg of an individual only, and the other leg is normal.

When collecting in the interior of British Columbia, I obtained a sample of 27 specimens which at first sight seemed to belong to *C. vulnerata*. A closer study, however, revealed that all 16 males of the sample had an extreme type of "variant" arrangement of palmar pegs in both fore legs. The consistency of this "variation" caught my attention, and by borrowing all available material from several collections I obtained more data on this phenomenon. The investigation revealed that some variation does exist in the characteristics of *C. vulnerata*, but also another species has been included in this variation. In the following, Hungerford's (1948) redescription of *C. vulnerata* is being amended, and a new species is being described.

Callicorixa vulnerata (Uhler)

Male palpa apically curved anteriorly (Fig. 1). Palmar pegs always in two rows; the basal row dorsoventrally slightly curved (Fig. 2) and occasionally 1-2 of the most distal pegs of the basal row or the most proximal peg of the apical row out of line (Figs. 3-4). One third to one fourth of the first tarsal segment of hind leg apically infuscated (Fig. 12). Abdominal dorsum of male as in Fig. 5. Tip of the right paramere long and definitely curved (Figs. 6-11).

Location of types: According to Hungerford (1948) the two female specimens from which the original description of *Corixa vulnerata* was drawn, are in the Uhler collection of the U.S. National Museum. Hungerford has labeled one of them as the lectotype and the other as paratype. I have seen only the paratype, a pale teneral specimen. Quite unacceptably, when describing male characters of *C. vulnerata*, Hungerford (1948) further designated a male allotype and six parallotypes from a series of 7 males and 11 females labeled "Arlington, Washington, 7-28-1931, L. D. Anderson". In the collections of the Snow Entomological Museum I have seen three of the females, but none of the males could be located.



Figs. 1-12. *Callicorixa vulnerata* (Uhler). Figs. 1-2. Male fore leg, dorsal and anterior views. Figs. 3-4. Male fore tarsi, showing variation in arrangement of palar pegs. Fig. 5. Male abdomen, dorsal view. Fig. 6. Male genital capsule. Figs. 7-8. Right paramere, lateral and ventral views (specimen from Vancouver, British Columbia). Figs. 9-11. Variation of tip of the right paramere (specimens from Anchorage, Alaska; Crater Lake National Park, Oregon; Clam Beach, California). Fig. 12. Tarsal segments of hind leg. — Scale lines (1 mm) apply as follows: a = Figs. 5 and 12; b = Figs. 1-4 and 6; c = Figs. 7-11.

No overall reliable marks of identification exist for *Callicorixa* females (see below). However, the specimen labeled as paratype of *Corisa vulnerata* and the females which belong to the same series with the Hungerford's male allotype and paratypes are all typical coastal specimens. Thus, although the males from Arlington are missing, it seems safe to assume that Hungerford's (1948) description of male characteristics was mainly based on true *C. vulnerata* specimens; only the variation shown in Figs. 2a, 2c, 2f and 2g of Plate LXXIII in Hungerford (1948) was not based on this species.

Additional material studied from the following localities (cf. Fig. 24):

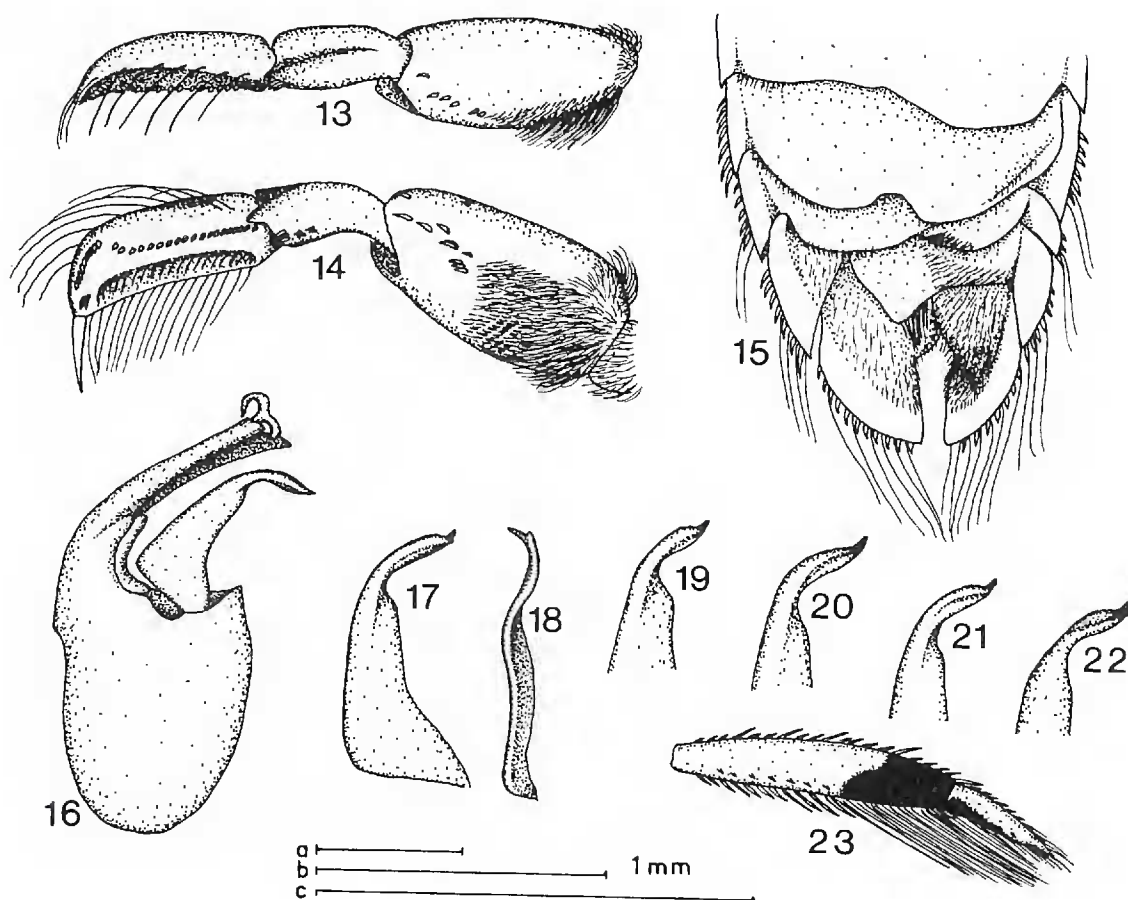
Alaska: Anchorage.

British Columbia: Alta Lake area, Chilliwack, Courtenay, Departure Bay, Galiano Island, Hope, Lakelse Lake, Malahat, Metchosin, Milner, Port Alberni, Queen Charlotte Islands, Saanich, Terrace, Vancouver.

Washington: Acme, Anacortes, Arlington, Bellingham, Cliffdell, Concrete, Copalis, Custer, Ellensburg, Enumclaw, Ferndale, Fort Lewis, Lake Cushman, Naches, San Juan Island, Stanwood, Strandell, Tacoma, Yelm.

Oregon: Bly Mountain, Charleston, Corvallis, Crater Lake National Park, Crescent, Florence, Fort Klamath, Grants Pass, Hood River, Klamath Falls, Modoc Point, Pistol River, Port Oxford, Portland, Waldport.

California: Berkeley, Carmel, Clam Beach, Eureka, Fort Bragg, Pt. Reyes, Van Damme State Park.



Figs. 13-23. *Callicorixa scudderii* n. sp. Figs. 13-14. Male fore leg, dorsal and anterior views. Fig. 15. Male abdomen, dorsal view. Fig. 16. Male genital capsule. Figs. 17-18. Right paramere, lateral and ventral views (specimen from Little Fort, British Columbia). Figs. 19-22. Variation of tip of the right paramere (specimens from Mission, British Columbia; Vancouver, British Columbia; Concrete, Washington; Bend, Oregon). Fig. 23. Tarsal segments of hind leg. — Scale lines (1 mm) apply as follows: a = Figs. 15 and 23; b = Figs. 13-14 and 16; c = Figs. 17-22.

***Callicorixa scudderii* new species**

Size: Length 7.0-8.1 mm; width of head 2.1-2.5 mm.

Color: General facies medium to dark brown. Pronotum crossed by 8, seldom 7 or 9 brown lines which are usually somewhat narrower than the pale ones. Claval lines regular at base, slightly irregular distally. Dark bands of corium somewhat irregular. Membranal pattern reticulate, separated from corium by pale line. Embolium yellowish. Head pale, thorax smoky to black; abdomen smoky to black in males, smoky to yellowish in females. Fore tibia and pala dorsally heavily infuscated in males, pala dorsally slightly infuscated in females. Black spot on apical third of the first tarsal segment of hind leg ventrally usually longer than dorsally, and also the second tarsal segment of hind leg venterobasally usually somewhat infuscated (Fig. 23).

Structural characteristics: Head about half as long as pronotum. Facial hairs few; synthlipsis about equal to width of an eye; male fovea broad and shallow. Lateral lobe of prothorax slightly tapering, about half as wide as long. Mesoepimeron narrow, osteole near tip. Metaxyphus slightly longer than wide. Male fore femur with a patch of rather long hairs anterobasally (Figs. 13-14); 5-6 rows of stridulatory pegs, partly covered by the long hairs. Pala nearly straight (Fig. 13). Palar pegs in two rows; basal row proximally nearly straight, distally with 2-3 pegs curving dorsally toward the apical row and almost linking the two rows together (Fig. 14); number of pegs in basal row about 20, in apical row about 9. Male abdomen dorsally as in Fig. 15. Genital capsule as in Fig. 16. Tip of the right paramere only slightly curved, with some irregularities at the curving point

(Figs. 17-22). Middle leg femur : tibia : tarsus : claw = 100 : 48 : 33 : 33. Hind leg femur : tibia : tarsus 1 : tarsus 2 = 100 : 94 : 115 : 49.

Etymology: The species is named for Dr. G. G. E. Scudder (Vancouver, B.C.); thanks to him I was able to spend several years in Canada, and became familiar with North American Corixidae.

Comparative notes: In Hungerford's (1948) key for identification of *Callicorixa* species, difficulties arise when one has to decide whether males of *C. scudderi* have a dense hair patch on the fore femora. This mark of identification is clearly intermediate between the pilose area of *C. vulnerata* and the very thick patch of long hairs of all other North American species of the genus. However, this intermediate characteristic combined with the arrangement of the paler pegs and the shape of the right paramere, easily distinguishes males of *C. scudderi* from the other species. In females, Hungerford (1948) uses relative length of the infuscated area of hind leg tarsus 1 to separate species. This characteristic is not reliable and, for instance, specimens of *C. vulnerata* often have clearly more than one fourth of the segment infuscated. In *C. scudderi*, however, hind tarsus 2 is also somewhat infuscated, and in most cases this readily separates *C. scudderi* from the other species. Yet even this is not always a reliable mark of identification. In specimens of *C. vulnerata* from Queen Charlotte Islands I found several which showed tendency of tarsus 2 to be slightly infuscated. Thus, for females of *Callicorixa* no completely reliable marks of identification have been described.

Location of types: Holotype male: Canada, British Columbia, Little Fort, 25.VII.1969, A. Jansson. Deposited in my collection, Department of Zoology, University of Helsinki. Paratypes: 15 ♂♂ and 11 ♀♀; data as the holotype; deposited with the holotype, in Spencer Entomological Museum, University of British Columbia, Vancouver, and in the collections of the California Academy of Sciences, San Francisco.

Additional material studied (cf. Fig. 24):

British Columbia: Chinook Cove, Haney, Hiawatha Lake, Jim Smith Lake, Lake Windermere, Mission, New Lake, Oliver, Peachland, Penticton, Vancouver.

Washington: Concrete, Ferndale, Strandell.

Oregon: Bend, Camp Abbott, Corvallis, Hamilton, Hot Lake, Lapine, Portland, Pringle Falls, Terrebonne.

Distribution of *C. vulnerata* and *C. scudderi*

Since *C. scudderi* has been included in the variation of *C. vulnerata*, the distributional records must also be revised. Fig. 24 shows all Hungerford's (1948) records for *C. vulnerata*, and it is seen that of the records which I have been able to check, only three in British Columbia (Mission, Penticton, Peachland) and two in Oregon (Portland, Hot Lake) were actually based on specimens of *C. scudderi*. However, I have not been able to trace any of the *C. vulnerata* specimens recorded from Idaho, Montana, Wyoming, Utah, or interior California (Hungerford 1948). These records may have been based on misidentifications which have been corrected later on: in the map showing distribution of *Callicorixa* species Hungerford gives no records for *C. vulnerata* from the interior states. Thus, according to the present knowledge, *C. vulnerata* occurs only in Alaska, British Columbia,

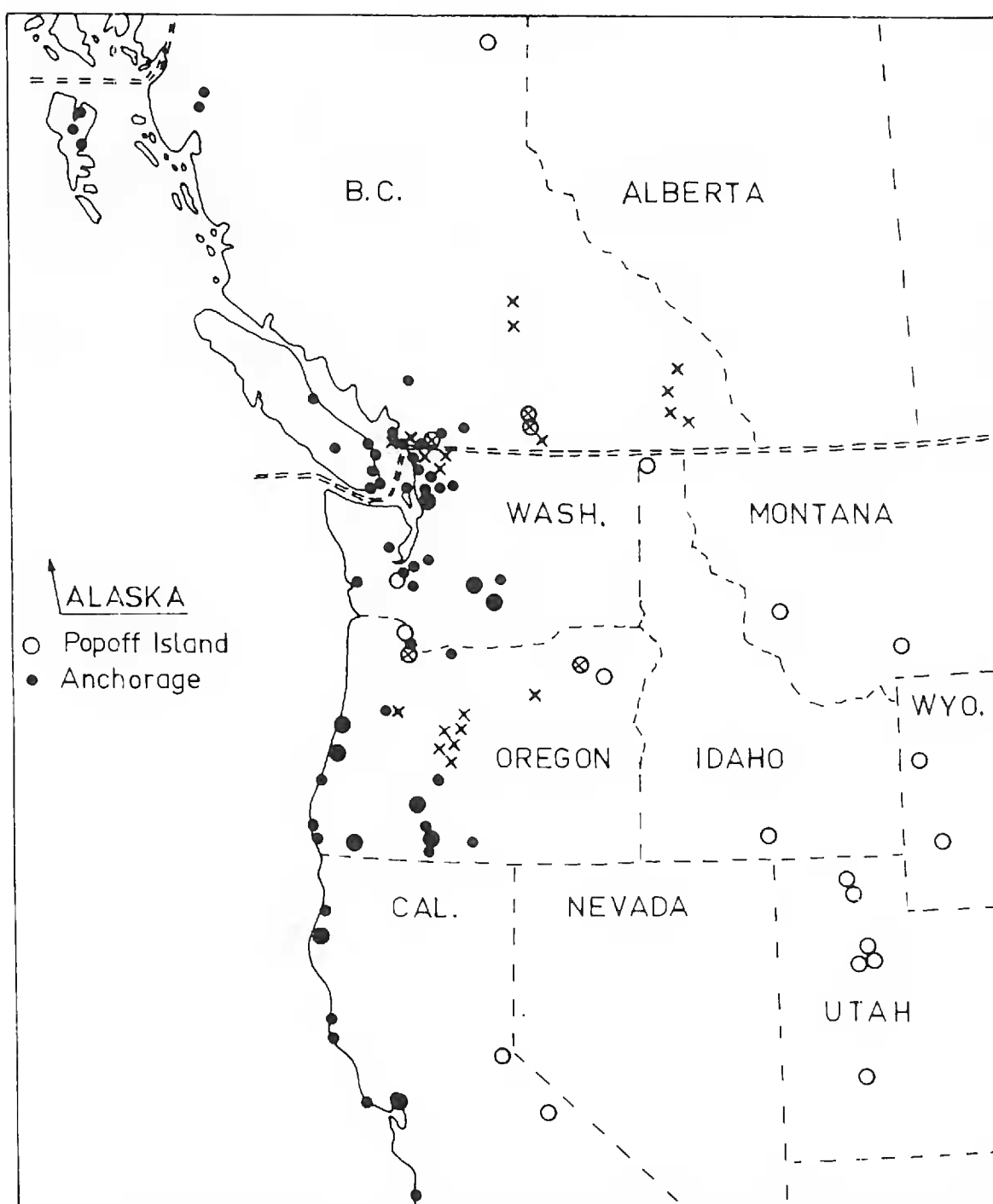


Fig. 24. Known geographic distributions of *Callicorixa vulnerata* and *C. scudderi*. Symbols: *C. vulnerata*: larger dots = Hungerford's (1948) records, verified; smaller dots = new records; circles = Hungerford's records which could not be traced down. *C. scudderi*: crosses = new records; circled crosses = Hungerford's records of *C. vulnerata* which turned out to be *C. scudderi*.

Washington, Oregon, and California. Its distribution follows the Pacific Coast, with the most eastern records only some 300 km inland in the Cascade Range area.

In the material studied *C. scudderi* was found from British Columbia, Washington and Oregon. Its main range seems to be confined to the areas between the Cascade Range and the Rocky Mountains, but in SW British Columbia and NW Washington the distribution reaches to the coastal lowlands where the species is sympatric with *C. vulnerata*. Also in certain areas in western Oregon the two species seem to be sympatric.

Acknowledgments

I am indebted to the following for loan of material: Dr. P.D. Ashlock (University of Kansas), Dr. K. G. A. Hamilton (Canadian National Collection), Dr. W. J. Hanson (Utah State University), Dr. J. L. Herring (United States National Museum), Dr. D. C. Rentz (California Academy of Sciences), Dr. R. T. Schuh (American Museum of Natural History), Dr. G. G. E. Scudder (University of British Columbia), Dr. G. M. Stonedahl (Western Washington State College), Dr. H. Strumpel (University of Hamburg), Dr. H. H. Weber (Kiel), and Dr. G. B. Wiggins (Royal Ontario Museum).

Literature Cited

- Hungerford, H. B.** 1948. The Corixidae of the Western Hemisphere (Hemiptera). Univ. Kansas Sci. Bull. 32: 1-827.
- Jansson, A.** 1978. Aberrant arrangement of male paler pegs in some *Callicorixa* species (Heteroptera, Corixidae). Notulae Entomol. 58: 15-17.

CORRECTION

Unfortunately, the illustration on page 218 of the article by Dr. J. Alcock, was omitted, and an incorrect illustration included in its place. The editors apologize to Dr. Alcock for this circumstance. Corrected reprints of the article may be obtained from the author.